SPECIFICATIONS

2083.00 & 2083.40

	2083.00	2083.40
Height:	16.8cm	16.8cm
Width:	50.8cm	50.8cm
Depth:	34.6cm	34.6cm
Weight:	14.0kg	18.1kg

Power Cord: #16/3 SJT, 15 feet long

Circuitry: Solid State

WARNING: DO NOT DIELECTRIC BREAK DOWN TEST THIS INSTRUMENT. INDUCTIVE SURGES FROM THE TRANSFORMER SECONDARY CAN DAMAGE THE SOLID STATE COMPONENTS.

Microamp Leakage: Line frequency source leakage current $\leq$ 10 microamps (1)
Line frequency sink leakage current $\leq$ 10 microamps

Input Voltage: 120 V.A.C., 60Hz Single Phase

Frequency: 500Hz

R.F. Wattage:

BIPOLAR: 50 watts maximum. Measured using a 100 ohm non-inductive load resistor.

UNIPOLAR: 100 watts maximum. Measured using a 500 ohm non-inductive load resistor.

Bipolar Meter: The meter is a visual indicator that reflects R.F. current flow through the bipolar section only. The meter is not calibrated to record exact current flow, but is intended only as an aid for the doctor, or assistants to verify proper instrument operation. The sensing unit is wired directly into the bipolar circuit and any fault in the circuit will cause the meter to stop.

(1) Line frequency sink leakage current is that current which flows from an external 120 V.A.C. RMS 60 Hz voltage source applied to patient leads and ground.

POWER READINGS

MODEL 2083.00 & 2083.40

Frequency: 500Hz

UNIPOLAR READINGS WITH A 500 OHM NON-INDUCTIVE LOAD

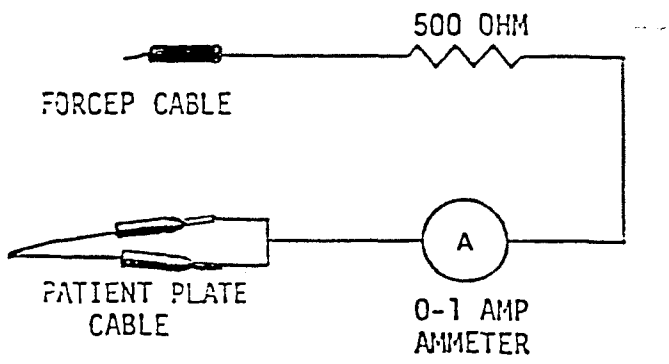
SETTING	MILLIAMPS	WATTS
1	135 ma	10w
2	181 ma	20w
3	234 ma	30w
4	268 ma	40w
5	301 ma	50w
6	331 ma	60w
7	360 ma	70w
8	389 ma	80w
9	420 ma	90w
10	450 ma	100w

BIPOLAR READINGS WITH A 100 OHM NON-INDUCTIVE LOAD

SETTING	MILLIAMPS	WATTS
1	147 ma	2w
2	231 ma	5w
3	326 ma	10w
4	438 ma	18w
5	576 ma	31w
6	710 ma	50w

MODEL 2083.00 & 2083.40

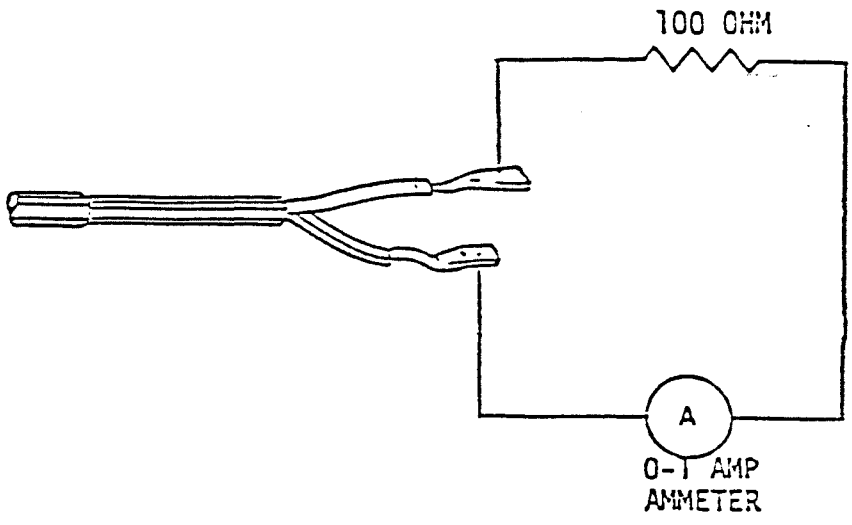
UNIPOLAR CALIBRATION CHECKS:



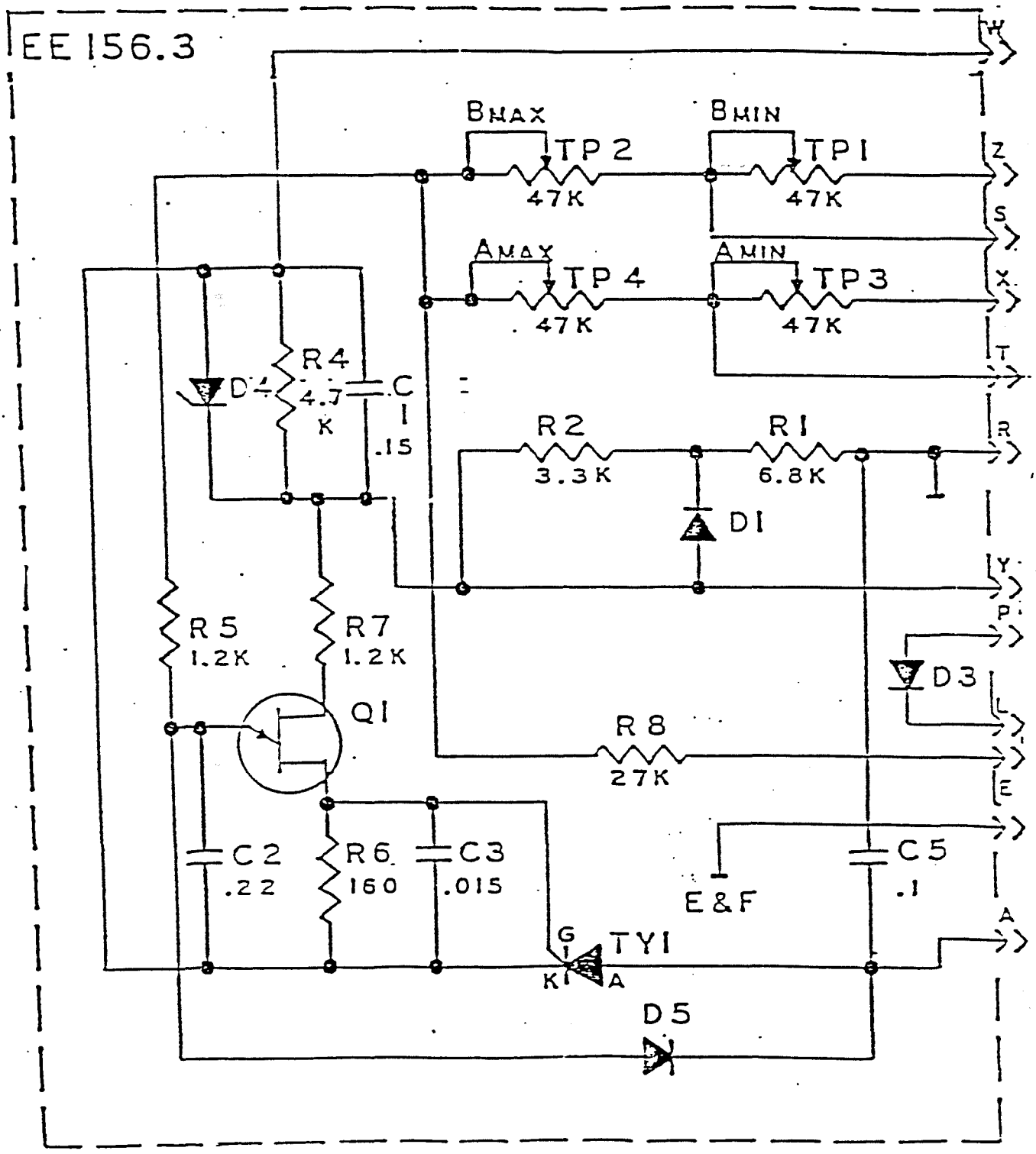
1. Connect a 500 ohm non-inductive resistor and a 0-1 amp R.F. ammeter in series between the unipolar forcep cable and the patient plate cable.
2. Set Unipolar Bipolar Selector Switch to unipolar mode.
3. Set Unipolar Power Control to ten (10).
4. Apply 120 V.A.C. to the unit.
5. Depress Main Power Switch.
6. Depress Footswitch.
7. R.F. ammeter should read approximately 450 milliampers.
8. If not, adjust TP4 on P.C. board EE156.3 until 450 milliampers is indicated on the ammeter.
9. Replace 0-1 amp ammeter with 0-250 milliamper ammeter.
10. Set Unipolar Power Control to one (1).
11. Follow Steps 4 - 6.
12. R.F. ammeter should read 135 milliampers.
13. If not, adjust TP3 on P.C. board EE156.3 until 135 milliampers is indicated on R.F. ammeter.

MODEL 2083.00 & 2083.40

BIPOLAR CALIBRATION CHECKS:



1. Connect a 100 ohm non-inductive resistor and a 0-1 amp R.F. ammeter in a series with the jaws of the bipolar forceps.
2. Set Unipolar/Bipolar Selector Switch to the bipolar mode.
3. Set Bipolar Power Control to six (6).
4. Apply 120 V.A.C. to the unit.
5. Depress Main Power Switch.
6. Depress Footswitch.
7. R.F. ammeter should read approximately 710 milliampers.
8. If not, adjust TP2 on P.C. board EE156.3 until 710 milliampers is indicated on the R.F. ammeter.


EE 156.3
BMAX
TP 2
47K
BMIN
TP 1
47K
AMAX
TP 4
47K
AMIN
TP 3
47K
W
Z
S
X
T
R4
4.7K
C1
.15
D4
R2
3.3K
R1
6.8K
D1
R
Y
P
R5
1.2K
R7
1.2K
Q1
D3
L
R8
27K
E
C2
.22
R6
160
C3
.015
E&F
C5
.1
A
G
K
A
TY1
D5

REPLACEMENT PARTS LIST

2083.00 & 2083.40

PART NUMBER	DESCRIPTION
2083-157.5	Printed circuit board
2083-150.3	Printed circuit board
2083-151.2	Printed circuit board
2083-156.3	Printed circuit board
2083-P1	Plug, cord
2083-F1	Fuse, 5 amp, Main power ON
2083-SW1	Switch, Main power ON, S T D P
2083-T1	Transformer, main
2083-T1F1	Transformer fuse, 4 amp, PRIMARY
2083-T1F2	Transformer fuse, 6 amp, SECONDARY
2083-T1F3	Transformer fuse, 1 amp, SECONDARY
2083-G11	Full wave bridge rectifier
2083-DS1	Indicator lamp
2083-C1	Capacitor, 200uf
2083-C2	Capacitor, 200uf
2083-R1	Resistor, 10K ohms
2083-A1F1	Fuse, 3 amp
2083-A1SW1	Switch, power ON light source
2083-A1SW2	Interlock switch
2083-A1M1	Blower motor
2083-A1F3	Fuse, 3 amp
2083-A1T1	Transformer
2083-A1R1	Resistor, 250K ohm
2083-A1C1	Capacitor, .1uf
2083-A1U1	Dimmer circuit
2083-A1SW3	Switch, right, left lamp
2083-A1DS1	Lamp, left, EJM type
2083-A1DS2	Lamp, right, EJM type
2083-A2	Printed circuit board
2083-S1	Unipolar power selector switch
2083-S2	Bipolar power selector switch
2083-J9	Bipolar cable receptacle
2083-J8	Unipolar cable receptacle
2083-J7	Patient plate cable receptacle
2083-J10	Foot switch cable receptacle
2083-M1	Bipolar current meter

-continued

PART NUMBER	DESCRIPTION
2083.S3	Unipolar/bipolar mode selector switch
AW 561-3	Lamp assembly #2
AW 562-2	Lamp assembly #1
AW 431	Lamp spring
AW 429	Lamp ejector
AW 324-1	Collars (pkg. of 4)
AW 25-44-1	Lamp socket

ACCESSORIES FOR 2083.00 & 2083.40

2083-03	3-prong patient plate
2083-01	Footswitch
2083-04	Perforated rubber strap
2083-02	Patient plate connecting cable

RICHARD WOLF MEDICAL INSTRUMENTS CORP.
353 CORPORATE WOODS PARKWAY, VERNON HILLS, IL 60061
Tel: (708) 913-1113 • Customer Service: 1 (800) 323-WOLF
Fax: (708) 913-1488 • Repair Service: 1 (800) 323-2160

SCHEMATIC FOR HIGH FREQUENCY CONVERTER 2003.00

RICHARD WOLF

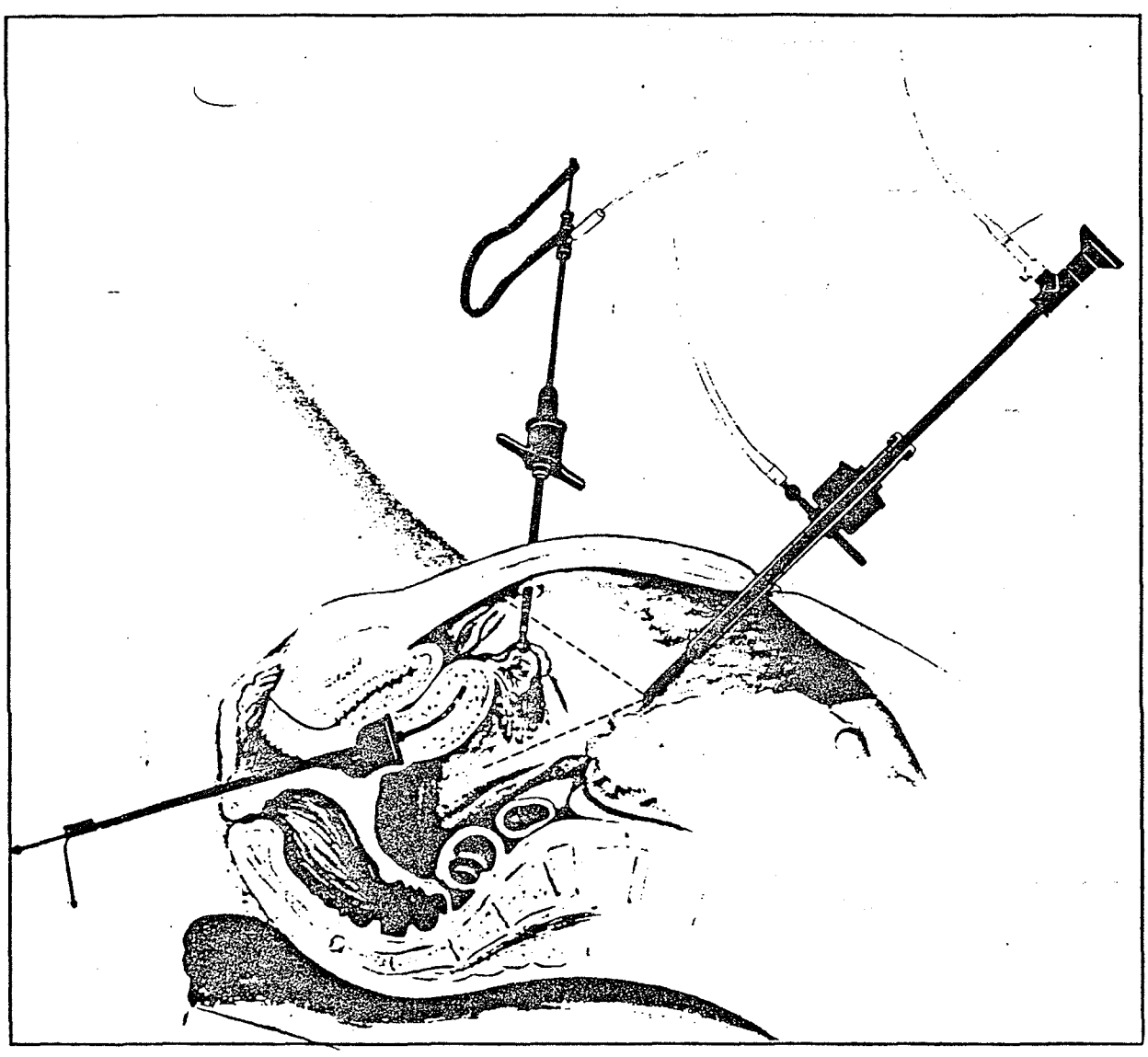
RICHARD WOLF

SCHEMATIC FOR HIGH FREQUENCY GENERATOR E308340

EG-10-83

~~E6-02-81~~

2083.00 & 2083.40



R.WOLF

SPECIFICATIONS

WARNINGS:

DO NOT USE IN THE PRESENCE OF FLAMMABLE ANESTHETICS.

DO NOT USE ON CARDIAC PATIENTS WITH PACEMAKERS IMPLANTED.

DO NOT USE UNIT WITHOUT PROPER ELECTRICAL GROUND.

DO NOT USE ANY ELECTROSURGICAL CABLES WHICH SHOW THE SLIGHTEST DETERIORATION.

DO NOT ATTEMPT TO MAKE ANY INTERNAL REPAIRS ON THE UNIT.

DO NOT BLOCK VENTILATION SYSTEM AT REAR OF UNIT.

DO NOT CHANGE POWER LINE CORD UNLESS YOU OBSERVE THE FOLLOWING:

a. GREEN WIRE MUST BE CONNECTED TO GROUND.

b. BLACK WIRE IS TO BE CONNECTED TO THE UNGROUNDED ELECTRICAL SUPPLY.

c. WHITE WIRE IS TO BE CONNECTED TO THE GROUNDED ELECTRICAL SUPPLY.

DO NOT LOOK BACK INTO THE LIGHT PIPE OR ANY OTHER PART OF THE LIGHT SYSTEM.

DO NOT SWITCH ON THE HIGH FREQUENCY CURRENT UNTIL THE INSTRUMENT HAS GRASPED THE TISSUE SECTIONS TO BE COAGULATED.

INSULATION OF THE INSTRUMENTS MUST BE CHECKED FOR DAMAGE PRIOR TO USE.

SPECIFICATIONS
MODEL 2083.00 & 2083.40

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7046 LYNDON AVE.
ROSEMONT ILLINOIS 60018
TEL.: (312) 298-3150
TELEX 72-6408

	2083.40	2083.00
Height:	6 5/8 inches (16.8 cm)	6 5/8 inches (16.8 cm)
Width:	20 inches (50.8 cm)	20 inches (50.8 cm)
Depth:	13 5/8 inches (34.6 cm)	13 5/8 inches (34.6 cm)
Weight:	40 pounds (18.1 kg)	31 pounds (14.0 kg)

Power Cord: #16/3 STJO 15' long.
Cord Plug: Hospital Grade Arrow-Hart #6266 HG or equivalent.
Circuitry: Long life oscillator tubes with associated solid state control circuits.
Microamp Leakage: Output Isolation
Line frequency source leakage current $\leq$ 2 milliamps
Line frequency sink leakage current $\leq$ 10 milliamps
Line frequency sink current is that current which flows from an external 120 V.A.C. RMS 60 HZ voltage source applied to patient leads and ground. A 1 K ohm resistance is placed in series with the external voltage source for safety.

UNIPOLAR:

Input Voltage: 120 V.A.C. $\pm$ 10% 50/60 HZ, single phase
Wattage: 100 watt RF output
Amperage:

108 V.A.C.	2.4 amps	82 watts
120 V.A.C.	2.8 amps	100 watts
132 V.A.C.	3.0 amps	122 watts

Maximum Voltage enerated: 1,200 volts peak to peak across oscillator coil.
850 V.D.C. plate supply voltage
Frequency: 1.75 MHZ
Output power Control: The output power is essentially linear (10 watt steps) with control rotation from one (1) to ten (10). Due to the natural variation in tube characteristics and other component tolerances, we do not adjust the 10 watt increments to a tolerance.

BIPOLAR:

Wattage: 50 watts. Measured using a 75 ohm non-inductive load resistor (820 milliampers at 75 ohm)

Bipolar Meter: The meter is a visual indicator that reflects RF current flow through the bipolar section only. The meter is not calibrated to record exact current flow, but is intended only as an aid for the doctor, or assistants to verify proper instrument operation. The sensing unit is wired directly into the bipolar circuit and any fault in the circuit will cause the meter to stop.

A pre-operative test is also possible by closing the forcep jaws (or shorting out the bipolar terminal), and checking for activation of the meter. If in position #6 the meter vane does not move to the maximum, a check for proper connection should be made. A safety circuit is built in to protect the meter from this overload

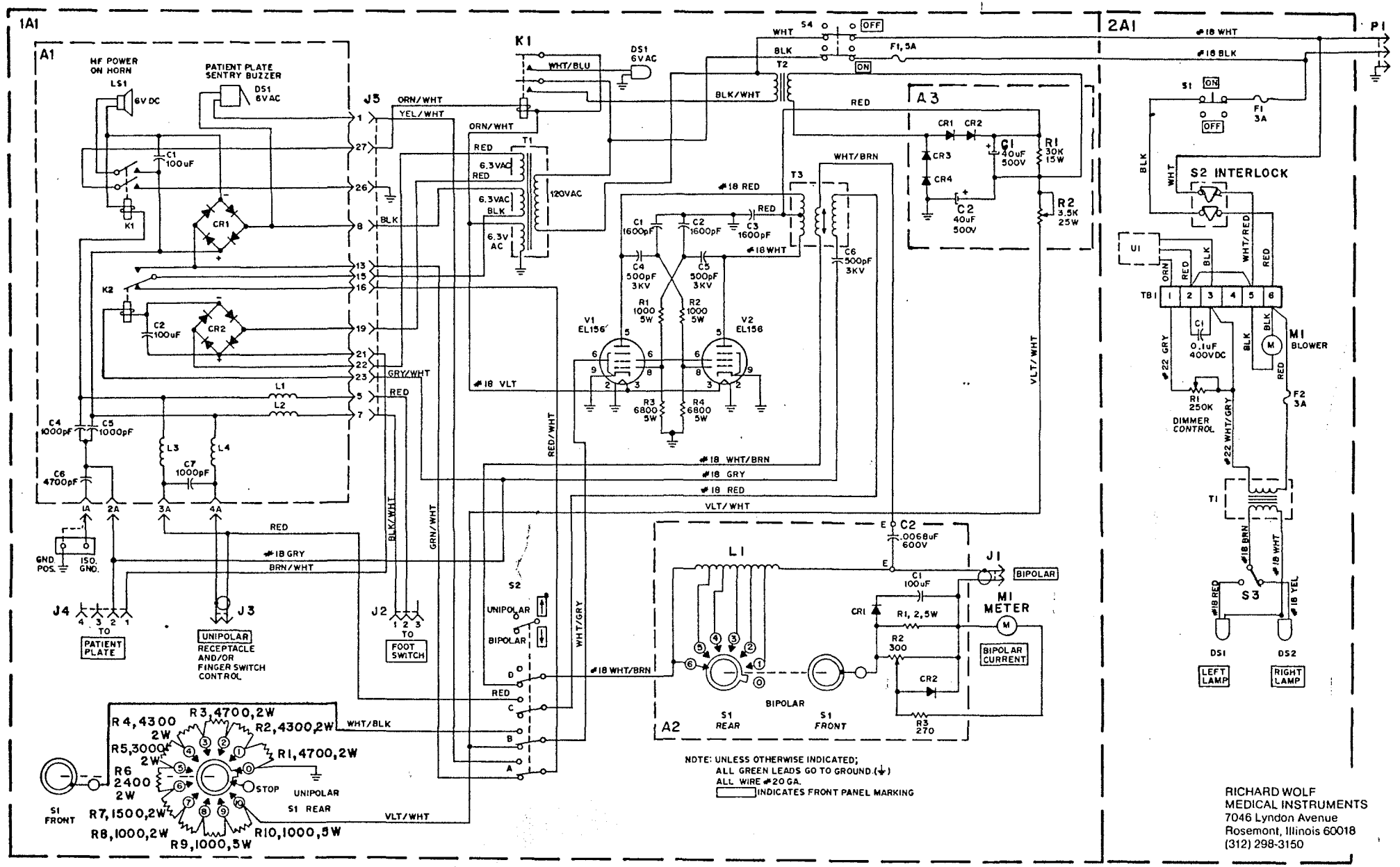
Unipolar & Bipolar

Power Source: Both the unipolar and bipolar are powered by the same oscillator generator. The switch provided on the front panel will transfer the power from unipolar to bipolar. This switch provides complete isolation between each mode of operation

ORIGINAL R. WOLF INSTRUMENTS WITH lumina TELESCOPE

SCHEMATIC FOR HIGH FREQUENCY GENERATOR MODEL #E2083.40

R.WOLF
ENDOSCOPE



RICHARD WOLF
MEDICAL INSTRUMENTS
7046 Lyndon Avenue
Rosemont, Illinois 60018
(312) 298-3150

E2083.40 PARTS LIST

NO.	PART	DESCRIPTION	MANUFACTURER
1A1			
C1	CAPACITORS	1600 pF 3KV	DRALORIC
C2	CAPACITORS	1600 pF 3KV	DRALORIC
C3	CAPACITORS	1600 pF 3KV	DRALORIC
C4	CAPACITORS	500 pF 3KV	DRALORIC
C5	CAPACITORS	500 pF 3KV	DRALORIC
C6	CAPACITORS	500 pF 3KV	DRALORIC
DS1	LAMP 6VAC	#328	CHGO. MINATURE
F1	FUSE	3AG 5 AMP	LITTLEFUSE
	RECEPTACLES		
J1	BIPOLAR	#91-PC 3F	AMPHENOL
J2	FOOT SWITCH		
J3	UNIPOLAR		
J4	PATIENT PLATE	#91-PC4F	AMPHENOL
J5	31 PIN TO 1A1A1		HARTING
K1	RELAY		SIEMENS
M1	METER	0-1 MILLIMETER	SIMPSON ELEC.
P1	LINE PLUG	#6266 HG	ARROW HART
	LINE CORD	#16/3 SJT or SJTO 15"	
R1	RESISTORS	1000 5 W	OHMITE
R2		1000 5 W	OHMITE
R3		6800 5 W	OHMITE
R4		6800 5 W	OHMITE
R7		4700 2 W	
R8		4300 2 W	
R9		4700 2 W	
R10		4300 2 W	
R11		3000 2 W	
R12		2400 2 W	
R13		1500 2 W	
R14		1000 2 W	
R15		2000 5 W	OHMITE
R16		2000 6 W	OHMITE
	SWITCHES		
S1	UNIPOLAR	513473117-J1	OAK IND. INC.
S2	UNIPOLAR TO BIPOLAR	4PDT	
S3	NOT USED		
S4	MAIN	2WIX11 2 PST	ERNEST DREEFS

E2083.40 PARTS LIST (continued)

NO.	PART	DESCRIPTION	MANUFACTURER
T1	TRANSFORMERS	LOW VOLTAGE	
T2		HIGH VOLTAGE	
T3		OSCILLATOR	
V1 & 2	TUBES	E1-156	TELEFUNKEN
1A1-A1			
C1	CAPACITORS	100 uF 35V	ROEDERSTEIN
C2		100 uF 35V	ROEDERSTEIN
C3	NOT USED		
C4		1000 pF 3KV	
C5		1000 pF 3KV	
C6		4700 pF 2KV	
C7		1000 pF 3KV	
CR1	FULL WAVE BRIDGE RECTIFIERS	B80C1000	AEG
CR2		B80C1000	AEG
DS1	BUZZER	6-AC	
K1	RELAY	V23154	SIEMENS
K2	RELAY	V23154	SIEMENS
L1/4	CHOKE COILS		
LS1	HORN	SNP428 SOMALERT	PR MALLORY
1A1-A2			
C1	CAPACITOR	100 uF 12V	SPRAGUE
C2		.0068 uF 600V	CDE
CR1	DIODE	ECG 109	SYLVANIA
CR2	DIODE	ECG 125	SYLVANIA
L1	CHOKE COIL	TAPPED	
R1	RESISTOR	2 NON-IND 5 W	OHMITE
R2	ADJ	300 MTC-32 L1	MALLORY
R3		270 1/4 W	
S1	SWITCH ROTARY	513473117-J1	OAK IND. INC.
1A1-A3			
CR1-4	DIODES (4)	By 127	VALVO
C1	CAPACITOR	40 uF,500V	
C2	CAPACITOR	40 uF, 500V	
R1	RESISTOR	30K, 15W	OHMITE
R2	RESISTOR	3.5K, 25 W ADJ.	

E2083.40 PARTS LIST (continued)

NO.	PART	DESCRIPTION	MANUFACTURER
2A1			
C1	CAPACITOR	0.1 uF 400V	
DS 1 & 2	LAMPS	EJM	GENERAL ELECTRIC
F1	FUSE	3AG 3 AMP	LITTLEFUSE
F2	FUSE	3AG 3 AMP	LITTLEFUSE
M1	BLOWER MOTOR	3M604	DAYTON
R1	POTENTIOMETER	BAS-1253-701 250K	CENTRALAB
	SWITCHES		
S1	MAIN	2WIX11 2PST	ERNEST DREEFS
S2	INTERLOCK	(2) #E33	CHERRY ELEC. CO.
S3	LAMP	IWIX11 SPDT	ERNEST DREEFS
T1	TRANSFORMER		
TB1	TERMINAL BOARD		
U1	DIMMER CONTROL	KBGE-115C	KB ELECTRONICS
ACCESSORIES			
J1 *	E 810801B	BIPOLAR CABLE Cannot be repaired, replace	
J2 **	E2083.01 Use microphone connector #91 MC 3M	FOOT SWITCH	AMPHENOL
J3 ***	E8106.00 D815.00	UNIPOLAR CABLE (FORCEPS) UNIPOLAR CABLE (ELECTRODES) Cannot be repaired, replace	
J4 ****	E2083.02 Use microphone connector #91 Mc 4M Use banana plugs #211	NEUTRAL CABLE	 AMPHENOL H. H. SMITH
	E2083.03	GROUND PLATE	
	E2083.04	RUBBER STRAP	

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3.4 Calibration

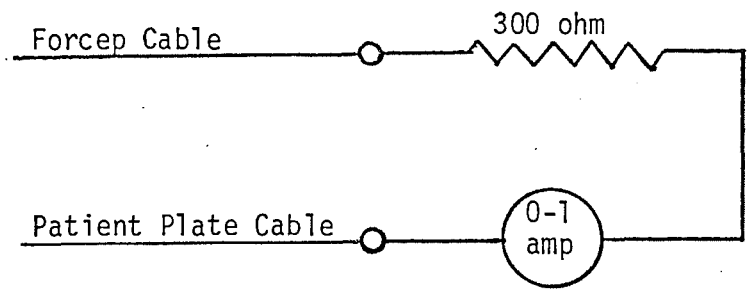
The instrument has been precisley calibrated at the factory and should not require further readjustment in the field. However, if during servicing procedures, adjustments have been inadvertently changed, or components have been replaced, check calibration and make necessary adjustments.

The RF oscillator is designed in a push-pull configuration with fixed grid resistors. The output is controlled by varying the voltage potential on the screen grids thru a resistor network.

NOTE: The unipolar section must be calibrated first.

3.4.1 UNIPOLAR:

1. Remove power from unit.
2. Remove top cover from case
3. Connect a 300 ohm non-reactive resistor and a 0-1 amp RF ammeter in series between the unipolar forcep cable and the patient plate cable.



4. Set unipolar/bipolar selector switch (E) to the unipolar mode.
5. Set unipolar high frequency power control (d) to ten (10)
6. Apply 120 V.A.C. to the unit.
7. Depress main power switch (H).
8. Depress footswitch.

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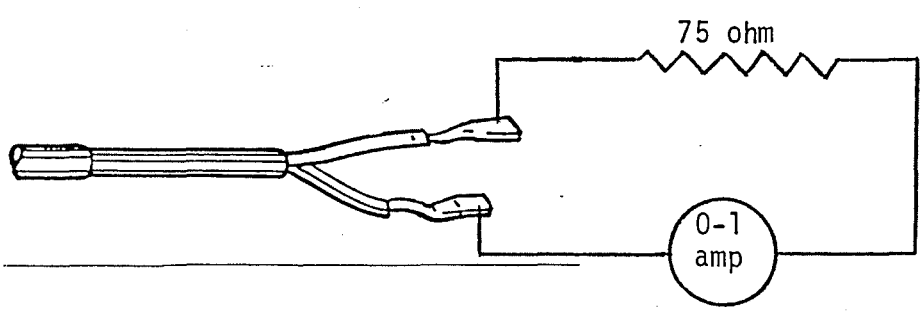
3.4 Calibration Cont.

9. RF ammeter should read 580 milliampers (100 watts).
10. If not, adjust R6 on the High Voltage P.C. Board A3 until you read 580 milliampers.

CAUTION: POWER MUST BE OFF WHEN ADJUSTING R6.

3.4.2 BIPOLAR:

1. Remove power from unit.
2. Connect a 75 ohm non-reactive resistor and a 0-1 amp RF ammeter in series with the jaws of the Bipolar forcep.



3. Set Unipolar/Bipolar Selecton Switch (E) to the Bipolar mode.
4. Set Bipolar High Frequency Power Control (G) to six (6).
5. Apply 120 V.A.C. to the unit.
6. Depress main power switch (H)..
7. Depress footswitch.
8. RF ammeter should read 820 milliampers.
9. If not, adjust Bipolar coil by moving it in or out of the RF field as required. Refer to 3.7.2 for location of Oscillator coil and Bipolar coil.

CAUTION: POWER MUST BE OFF WHEN ADJUSTING THE RF COIL.